EMOTIVA


*WHERE PASSION .....*
*AND HOME THEATRE MERGE*

# BPA-1

PROFESSIONAL 2 CHANNEL AV AMPLIFIER

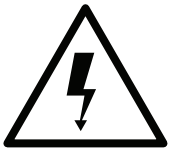
# *USER'S GUIDE*

# Table of Contents

# Safety Precautions

Read this User's Guide thoroughly before attempting to install and configure the Emotiva BPA-1 Power Amplifier. All the safety and operation instructions should be read before any operation of the component(s) begin. After successful installation and configuration of the Emotiva BPA-1 Power Amplifier, be sure to retain this manual in a safe place for any future reference needs.

All warnings on the Emotiva BPA-1 Power Amplifier and in these operating instructions should be followed. Safety is a key component to a long lasting and trouble free installation. The vast majority of the subsequent safety precautions involve simple common sense. If you are not comfortable with the installation of audio/video entertainment equipment, it will be to your benefit to seek the services of a qualified installation professional.



NEVER use the BPA-1 Power Amplifier near water such as a bathtub, washbowl, kitchen sink, laundry tub, in a wet basement, or near a swimming pool, etc. There is a risk of electric shock to your body and permanent damage to the equipment. Electric shock may result in permanent bodily injury or death.

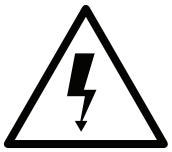
The Emotiva BPA-1 Power Amplifier should be situated so that its location or installation position does not interfere with proper ventilation. The Emotiva BPA-1 Power Amplifier should not be situated on a bed, sofa, rug, or similar surface that may block any ventilation openings; or placed in a built-in installation such as a bookcase, cabinet, or closed equipment rack that may impede the flow of air through ventilation openings. If installed in a closed equipment rack for custom installations, be sure to add forced air ventilation so that it has adequate air circulation. The Emotiva BPA-1 Power Amplifier should be situated away from heat sources such as radiators, or any other devices which produce heat.

The Emotiva BPA-1 Power Amplifier should be connected to a power supply only of the type described in this User's Guide and what is labeled on the BPA-1 component. Power supply cords should be routed so that they are not in high foot traffic areas or pinched by items placed upon or against them, paying particular attention to cords at the wall plugs, convenience receptacles, and the point where they connect into the BPA-1 Power Amplifier. The power cord of the BPA-1 Power Amplifier should be unplugged from the outlet when unused for a long period of time. When it's time for cleaning the Emotiva BPA-1 Power Amplifier, it should be cleaned only as recommended in this User's Guide. Never spray liquids directly into the component's vent openings. Care should be taken so that small objects do not fall into the inside of the BPA-1 Power Amplifier.

The following situations require your Emotiva BPA-1 Power Amplifier is serviced only by qualified service personnel:

1. *The power-supply cord or the plug has been damaged; or*
2. *Objects have fallen, or liquid has spilled into the component; or*
3. *The BPA-1 has been exposed to rain; or*
4. *The BPA-1 does not appear to operate normally or exhibits a marked change in performance; or*
5. *The BPA-1 has been dropped, or its enclosure or chassis is damaged.*

Owner's Guide. All other servicing should be referred to qualified service personnel.



**To prevent electric shock,** do not use this polarized plug with an extension cord, receptacle or other outlet unless the blades can be fully inserted to prevent blade exposure.
*Pour preevenir les chocs electriques ne pas utiliser cette f che polarises avec un prolongateur, un prise de courant ou une autre sortie de courant, sauf si les lames peuvent titre inserees a fond sans laisser aucune parIIe a decouvert.*

**Grounding or Polarization —** Precautions should be taken so that the grounding or polarization means of the component is not defeated.

This apparatus does not exceed the Class A/Class B (whichever is applicable) limits for radio noise emissions from digital apparatus as set out in the radio interference regulations of the Canadian Department of Communications.

*ATTENTION — Le present appareil numerique n'emet pas de bruits radioelectriques depassant las limites applicables aux appareils numeriques de class A/de class B (selon le cas) prescrites dans le reglement sur le brouillage radioelectrique edicts par les ministere des communications du Canada.*

For questions regarding service, please contact:

*Toll Free - (877) EMO-TECH*
*Website - www.emotivaaudio.com*

If you purchased your unit through AV123 and have service questions, please contact:

**AV123**
*2150 W. 6th Ave, Suite L*
*Broomfield, CO 80020*

*Toll Free - (877) 543-7500*
*Website - www.av123.com*
*e-mail - info@av123.com*

**WARNING –** TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.

**CAUTION:** TO PREVENT ELECTRIC SHOCK, MATCH WIDE BLADE OF PLUG TO WIDE SLOT, FULLY INSERT.

**ATTENTION:** POUR EVITER LES CHOCS ELECTRIQUES, INTRODUIRE LA LAME LA PLUS LARGE DE LA FICHE DANS LA BORNE CORRESPONDANTE DE LA PRISE ET POUSSER JUSQU'AU FOND.

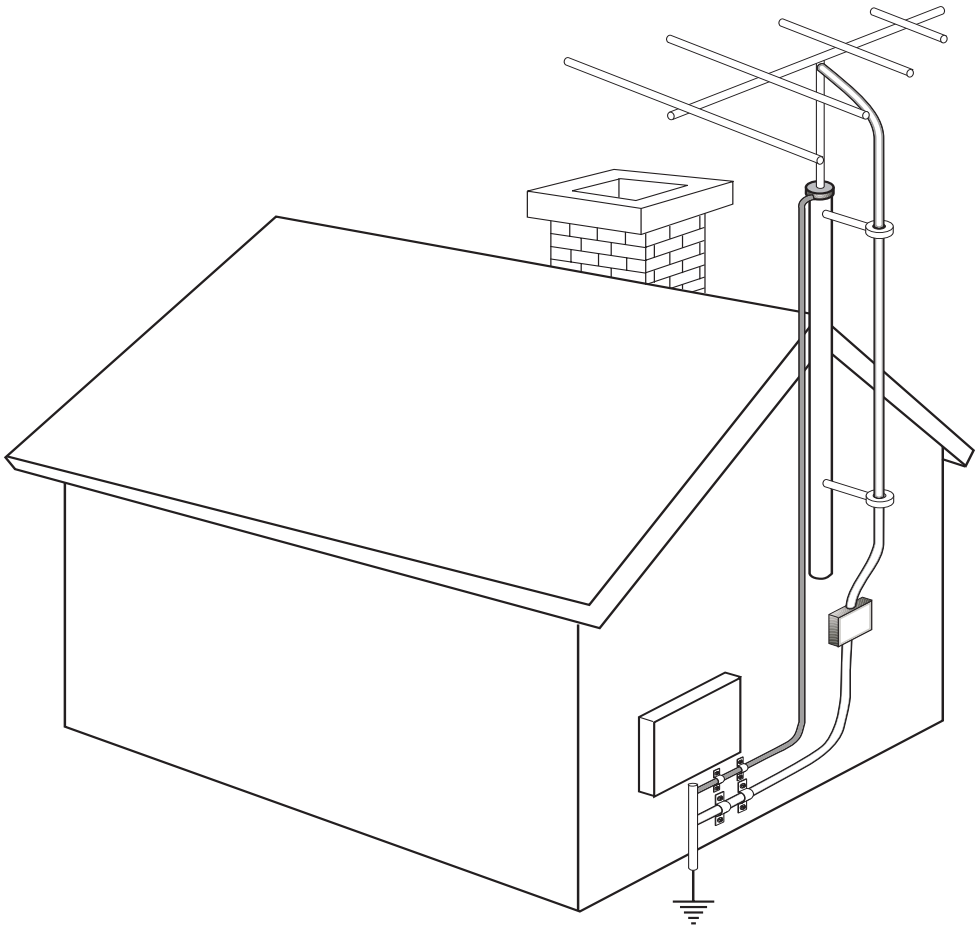
# NEC (National Electrical Code) Standards

### A Note for the Cable Television (CATV) Installer

This reminder is to call the CATV system installer's attention to Article 820-40 of the NEC that provides guidelines for proper grounding and in particular, specifies that the cable ground shall be connected to the grounding system of the building as close to the point of cable entry as practical.

### Antenna Grounding Outside the House

If an outside antenna is connected to the receiver, be sure the antenna system is grounded so as to provide some protection against voltage surges and built-up static charges. Article 810 of the National Electrical Code, ANSI/NFPA 70, provides information with regard to proper grounding of the lead-in wire to an antenna-discharge unit, connection to grounding electrodes, and requirements for the grounding electrode. See diagram below.



*Always observe proper antenna or satellite dish grounding techniques. When lightning strikes there is always the possibility that your antenna or dish (mounted high on the roof) can become a conduit for lightning and electrically damage any equipment to which it's connected. Additionally, proper grounding offers safety to the people using the audio/video system in the event of an electrical problem.*

# Thank You for your BPA-1 Purchase

Dear Home Entertainment Enthusiast,

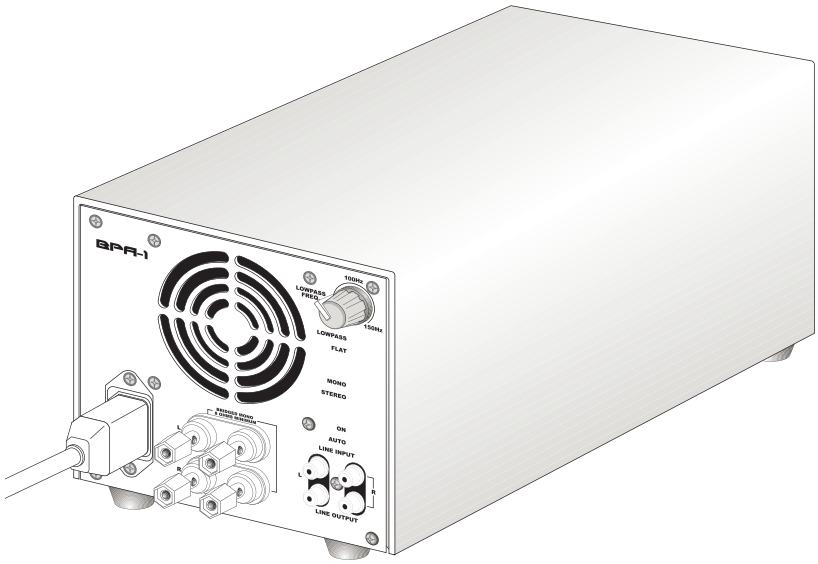
Thank you for purchasing the Emotiva BPA-1 Power Amplifier. We sincerely believe that it offers you outstanding performance and value. Emotiva products are engineered and produced with the highest quality materials and incorporate the latest technology. We think you will find the Emotiva BPA-1 meets or exceeds your expectations.

The Emotiva BPA-1 is specifically designed for multi-channel home theater applications. Due to its excellent size to power ratio and stereo/mono capability, it can fit into any application. It is ideal for driving second zone speakers and passive subwoofers.

The narrow width chassis is designed for convenient shelf or system rack mounting. These units will fit in the space that one stereo component amplifier normally would use. As such, it allows you to use one BPA-1 amplifier as left and right stereo front speakers, a second BPA-1 amplifier used as left and right (surround) speakers and a third BPA-1 amplifier used for center channel. Full range bridge mode capability allows the use of the two channels connected together to form one high power amplifier channel, providing 100 watts into 8 Ohm minimum load to something like a center channel (with a single BPA-1) or a discrete left and right setup (with two BPA-1's).

The BPA-1 can also be configured for use as a subwoofer amplifier with an adjustable electronic crossover. With crossover switch in the OFF position it is a full range amplifier, but when switched to LOWPASS, it will function as a subwoofer amplifier.

The power ratings for the Emotiva BPA-1 Power Amplifier are obtained using industry standardized measurements and Emotiva's own rigorous QC pass/fail testing process. The Emotiva BPA-1 Power Amplifier has been specially designed to drive any modern loudspeaker system with a rated nominal impedance of at least 4 Ohms.



# Unpacking the BPA-1

The Emotiva BPA-1 Power Amplifier should reach you in flawless condition. If you notice any shipping damage or other issues upon unpacking the unit, please contact your Emotiva Retailer immediately.

Gently lift out the unit and remove all the packing material and accessories. It is important to save all the packing materials and the box in case your Emotiva BPA-1 ever needs to be moved or shipped back to the factory for service.

Make sure that you keep your sales receipt. It is the only way for Emotiva to establish the duration of your Limited Warranty and it may come in useful for insurance purposes.

Please take a moment to fill out and mail the Emotiva Customer Response card.

## Recording the Serial Number

Please read the serial number located on the rear panel and record it below. Also record the place where you purchased this product and the date of purchase.

**Model Number** BPA-1

**Serial Number** _____

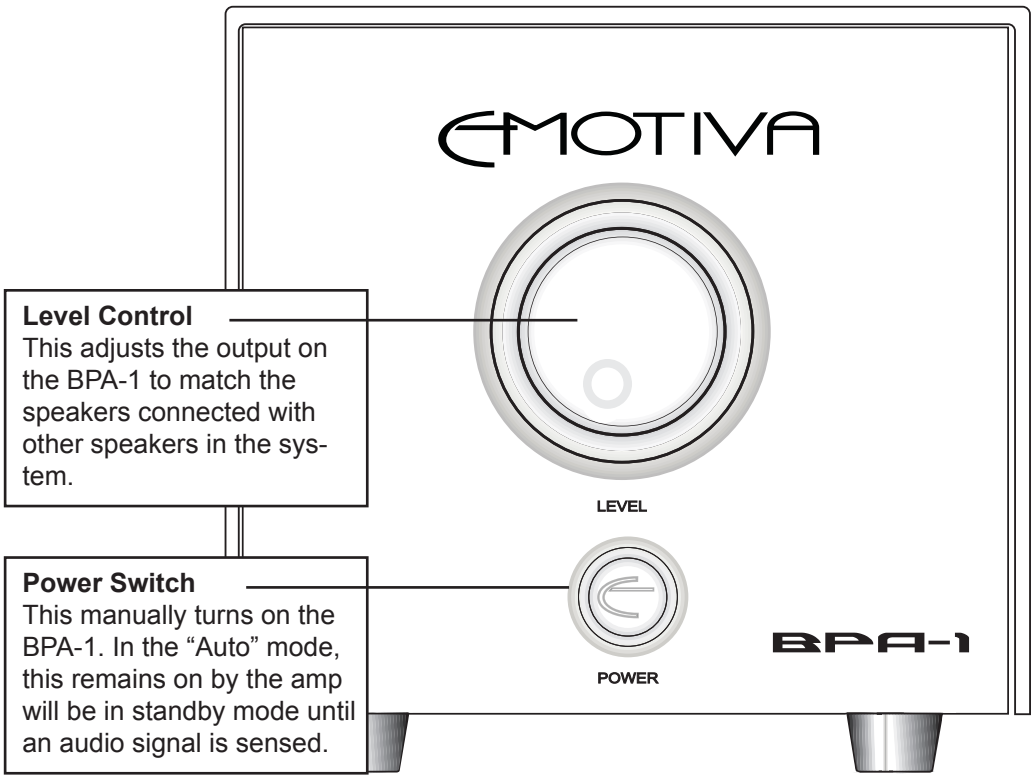
**Place of Purchase** _____

**Date of Purchase** _____

## Professional Power Amplifier Features

- *Audiophile quality power amplif er*
- *Full Range or Subwoofer Only Capabilities*
- *Adjustable Active Subwoofer Crossover, variable from 50-150Hz, 18dB/oct.*
- *Bridgeable in Full Range and Low Pass Mode*
- *75 Watts x 2 into 4 Ohms*
- *150 Watts x 1 into 8 Ohms (Bridged Configuration*
- *Gold Plated RCA inputs and "Pass Thru" outputs*
- *"Daisy Chain" capability with a single 2 channel input*
- *Thermal, Short Circuit, and Overload Protection Circuits*
- *Signal sensing auto turn-on and soft touch front panel power switch*
- *Silent turn on/off - No audible transients*
- *THD less than .01%, 20Hz-20kHz with 80kHz measurement bandwidth*
- *Signal to Noise Ratio >100dB*
- *IEC power inlet, 120 VAC (configurable to 230 AC)*

# Front Panel Layout

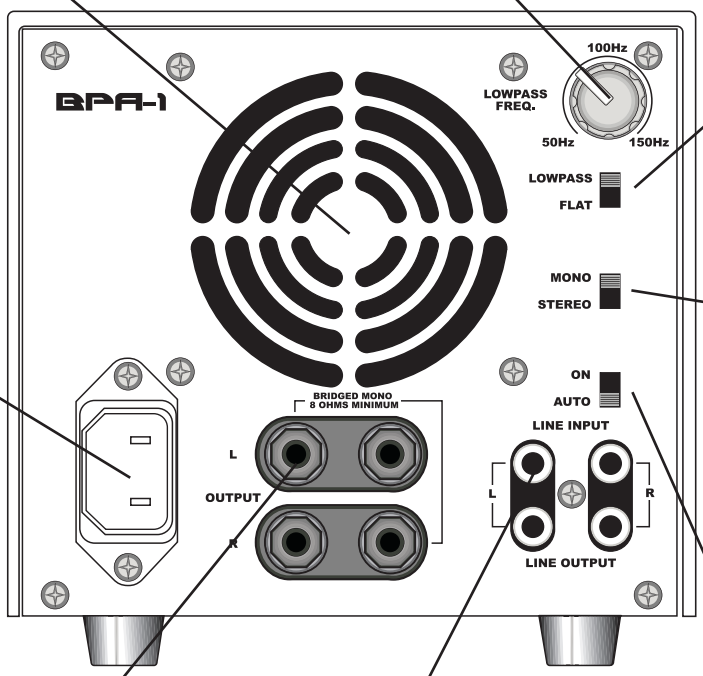


# Rear Panel Layout

**Cooling Fan**
Thermally controlled cooling fan runs according to the amplifier's thermal condition for the quietest operation.

**Crossover Frequency**
In the LOWPASS mode, this control adjusts the cross-over point between 50Hz-150Hz. See pages 10-11 for details.

**Crossover Switch**
Set the switch LOWPASS for use with a subwoofer or FLAT for full range (20Hz-20KHz) operation. See pages 10-11 for details.




**Power Plug**
IEC 120VAC/60Hz. Can be converted to 230VAC/50Hz. Contact Emotiva for details.

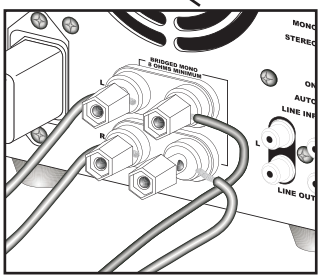
**Mono/Stereo Switch**
Set the switch to Stereo for 2 channel operation or MONO for bridged operation. See pages 10-11 for details.

**Speaker Output Terminals**
5 way binding posts for left and right channels. Bridged configuration is Left + and Right -. See page 10 for details.

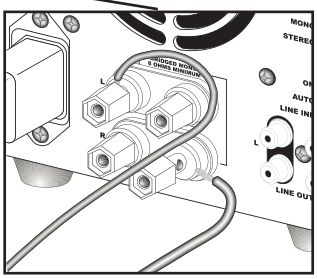
**RCA Inputs and Outputs**
2 Channel inputs and non buffered outputs. For application on bridging input or pass through output, see pages 10-11 for details.

**Auto ON Switch**
In the ON Mode, the front panel switch of the BPA-1 is used to turn on the amplifier.

In the AUTO Mode, the front panel switch of the BPA-1 remains on and the amplifier "wakes up" with the presence of an audio signal.



*Stereo Configuration*



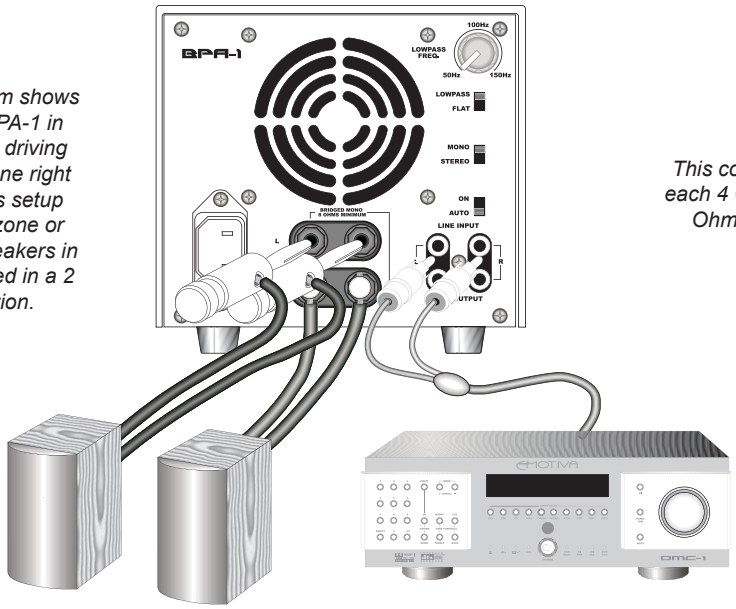
*Bridged Configuration*

# Connection Diagrams

### Stereo Connection

This diagram shows the BPA-1 connected to 2 speakers in a stereo configuration. The crossover switch is in the FLAT position. Speakers can be 4-8 Ohms.

*This connection diagram shows a typical use of the BPA-1 in a stereo configuration driving one left channel and one right channel speaker. This setup is ideal for a second zone or whenever the main speakers in the room are assembled in a 2 channel configuration.*

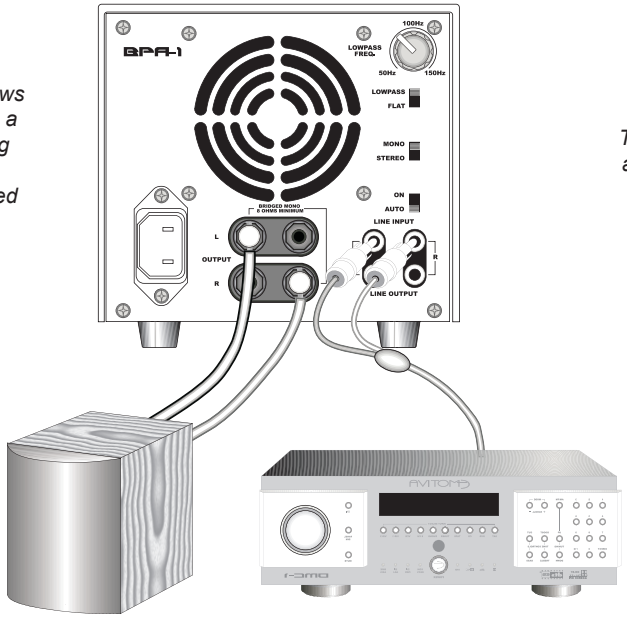



*This configuration delivers 75 watts into each 4 Ohm speaker. You can also use 8 Ohm speakers in this configuration.*

### Bridged Subwoofer Connection

This diagram shows the BPA-1 connected to 1 subwoofer in a bridged configuration. The LEFT input is the mono input for the bridged configuration and will come from your receiver or preamplifier's subwoofer output. The crossover switch is in the LOWPASS position. Crossover frequency should begin around 100Hz and be fine tuned once the system is playing as it depends on the frequency response of the other main speakers in your system. The subwoofer should be no less than 8 Ohms.

*This connection diagram shows a typical use of the BPA-1 in a bridged configuration driving a single subwoofer. This setup is ideal for non powered subwoofers or the woofer portion of a multi-element speaker that has bi-amp capabilities.*

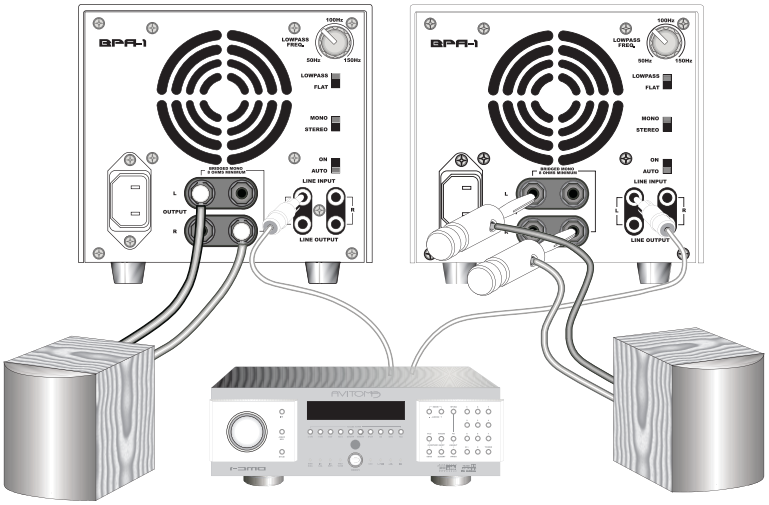



*This configuration delivers 150 watts into a single 8 Ohm speaker. You MUST use a speaker with a minimum of 8 Ohms nominal impedance for the bridged configuration!*

## Bridged Dual Mono Connection

This diagram shows two BPA-1 amplifiers connected to 2 full range speakers, each in a bridged configuration. The crossover switch is in the FLAT position. The RCA inputs are split so that each channel is fed into the LEFT RCA input at the amplifier. The LEFT input is the mono input for the bridged configuration. The speakers should be no less than 8 Ohms. This configuration allows the greatest channel separation and increases the individual power for each speaker.

*This connection diagram shows a typical use of two BPA-1's in a "dual mono" stereo configuration with each one driving a single full range speaker. This setup is ideal for a maximizing power to a speaker that requires 150 watts instead of 75 watts. You would gain roughly 3dB in output over a single amplifier configuration using this method.*

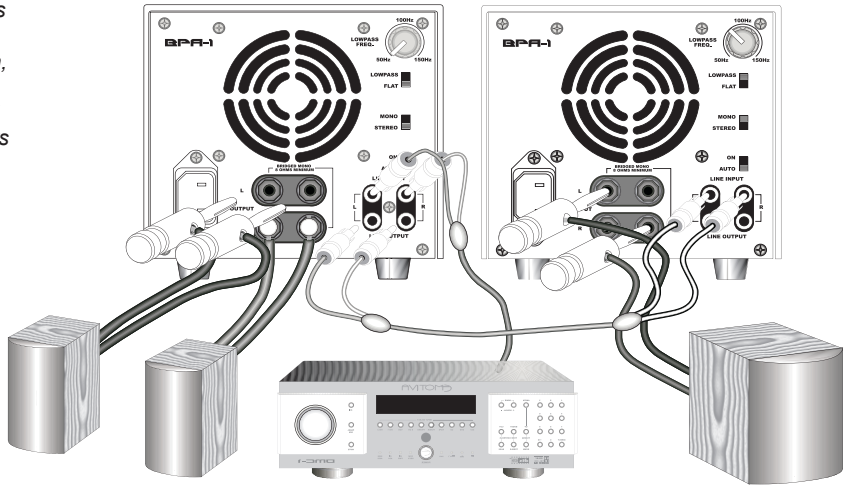



*This configuration delivers 150 watts into each 8 Ohm speaker. You MUST use a speaker with a minimum of 8 Ohms nominal impedance for the bridged configuration!*

## Daisy Chained BPA-1 Amplifiers

This diagram shows two BPA-1 amplifiers in a "Daisy Chain" configuration. Using the LINE OUT RCA jacks, you can pass signal through the BPA-1 on to other BPA-1 amplifiers. Based on how you want the amplifiers after the first one configured, you can select stereo or mono operation. It's advised to use the stereo amplifiers first in the signal chain and then break off to the mono configurations when using multiple BPA-1 amplifiers.

*This connection diagram shows a typical use of two BPA-1's running an entire full bandwidth, multi-speaker system. This setup is ideal for a using small "book shelf" style main speakers and a separate discrete subwoofer to reinforce the low frequency content.*




*This configuration delivers 75 watts into each 4 Ohm stereo speaker (on the left). You can also use 8 Ohm speakers in this configuration.*

*This configuration also delivers 150 watts the 8 Ohm subwoofer. You MUST use a speaker with a minimum of 8 Ohms nominal impedance for the bridged configuration!*

# Troubleshooting Guide

The Emotiva BPA-1 is expertly designed and built to provide years of trouble-free performance. Most problems that occur can usually be solved by checking your setup or making sure that the audio and video components connected to the amplifier are on and fully operational. The following information will help you deal with common setup problems you may experience during normal use of your unit. If problems persist, contact your Emotiva Dealer for help.

### No Sound (from one or more speakers connected to the BPA-1)

- *Speaker cables may have come undone. Turn off your system and check the cables, and tighten the amplifier and speaker binding posts.*
- *Damaged audio cable.*
- *The preamplifier volume level is low for the channels concerned. Recheck the preamplifier calibration procedure.*
- *A preamplifier Mute switch may be on, or an external processor loop or a tape monitor loop is engaged.*
- *Check that your preamplifier or source is running the correct surround sound mode. Maybe it is set for 2-channel stereo when you were expecting 5.1 surround sound.*
- *Check in case any missing channels have been turned off in a preamplifier setup menu. For example, the center amplifier channel will not receive a signal if the preamplifier has been set to "Phantom."*
- *The AUTO/ON switch on the BPA-1 might be in the ON position but the power switch is off. Check the power switch.*
- *A fuse within the unit may have blown.*
- *The level on the BPA-1 is turned down*

### The amplifier shuts down unexpectedly

- *Check that the positive and negative speaker wires are not shorted together.*
- *Make sure that no speakers are shorted internally. If you have an ohm-meter, disconnect the speaker wires and measure the resistance between the speaker's positive and negative terminals. If the reading is less than 4 ohms, you may be using speakers with too low a nominal impedance OR they could be electrically shorted. Measure all speakers and check their impedance specifications.*
- *If you have connected speakers in parallel, the overall impedance may be too low. It is recommended that you rearrange the speakers in a series wiring configuration to increase the overall impedance, thus taking some of the load off the amplifier.*
- *Make sure that the amplifier has good ventilation and is not overheating.*

### Poor Bass Performance From Full Range Speakers connected to the BPA-1

- *Make sure that your preamp does not have the bass (tone control) level turned down.*
- *Many surround preamplifiers have controls which can direct all the bass to subwoofers or let your main speakers play the full range. Make sure that the preamplifier has been correctly set. If you are not using a subwoofer, set the speaker options to "Large" where possible.*
- *Check that the speaker wires have been connected correctly. Make sure that the positive of each speaker connects to a positive output of the BPA-1 amplifier, and the negative of each speaker connects to a negative output of the BPA-1 amplifier. If one speaker is wired incorrectly, than it will be "out of phase" with the others resulting in poor bass performance.*

### Turn-on and turn-off thumps

- *Plug the amplifier into an un-switched AC outlet, and use the AUTO position of the turn on switch at the back of the amplifier. This will allow the amplifier to turn on and off silently.*

## "Hum" Noises in the Speakers

This problem is more than likely caused by a "ground loop" in your system, rather than a fault in the BPA-1. Follow these steps to isolate the main cause of the hum, there may even be more than one. Remember to turn off all components in your system, including the BPA-1, before disconnecting or connecting any cables.

- *Remember to turn off all components in your system, including the amplifier, before disconnecting or connecting any cables during troubleshooting.*
- *Try to have all of your equipment on the same electrical outlet or circuit. Group all the low power components (preamp, CD player, DVD etc.) on a single outlet or power strip. This is provided that the overall current draw from your equipment does not exceed the rating of the outlet or breaker.*
- *Disconnect all cables which come from outside the room, and check if the hum goes away. This includes such connections as cable TV, satellite TV, or roof top antennas. Make sure that they are disconnected where they first enter the room, so they are making no connection to the preamplifier or the TV, or any other component. If the hum is caused by the cable TV line, then you will need a "ground loop isolator." This is an inexpensive device fitted in line with the coaxial cable feed. Contact your cable company or your Emotiva Dealer for assistance.*
- *Disconnect all connections from the preamplifier to your TV, VCR or DVD.*
- *As a test, disconnect any other component which has a grounded power cord. Never remove the ground pin from any power cords (if present). This is very dangerous.*
- *If the hum persists, disconnect all the source components one at a time from the back of the preamplifier, until you identify the problem.*
- *Try moving the speaker cables away from any power cords. Try just one speaker, connecting it to each amplifier channel and see if one channel is bad.*
- *Check that the interconnect cables to the amplifier do not have any broken connections. The best way to do this is to substitute a known good connection for the suspect connection. If you reverse the cables and the problem goes away, the cable may be damaged or broken. This is possible even if you can't physically see the break as the strain for pulling on audio cables can sometimes break the wire internally.*

Ground loop isolators for audio lines and video devices are available from your Emotiva Dealer. Although this is not always an ideal solution, the grounding differences between certain home entertainment components sometimes require ground loop isolators. This is the exception rather than the rule.

## Other Probable Causes of Noise

Speaker noise may also be caused by interference or noise on your AC line. Make sure there are no large appliances sharing the line, or halogen lamps or light-dimming Triac devices.

- *Try connecting your system to another AC socket on a separate line.*
- *If the hum is heard from within the BPA-1 and not through the speakers, this may also be caused by interference on the AC or DC lines. The power transformers may turn this interference into an audible noise. Internal hum can be made worse by a shelf or cabinet resonating, so try moving the BPA-1 to another shelf.*
- *Try moving your components further away from the TV, especially if you ever notice the screen has changed color in the area closest to the component.*

If you have very high efficiency speakers, these may tend to reveal noises which other speakers do not.

## Problems with the whole A/V System

If you are having more complex problems in your overall home entertainment system (not just with the BPA-1 amplifier), please contact your Emotiva Dealer or AV123 (Exclusive US Distributor) for professional installation assistance. These professionals have years of experience with a wide range of home entertainment and lifestyle products and can offer you assistance in troubleshooting and rectifying problems.

### AV123 (Contact Information)

Toll Free - (877) 543-7500 (menu option 2)
Website - www.av123.com (click on "support")
e-mail - support@av123.com

# BPA-1 Technical Specification

| | |
|---|---|
| **Rated Power Output:** | 75 Watts (Stereo) into 4 |
| | 150 Watts (Bridged) into 8 |
| **Total Harmonic Distortion (THD):** | <0.1% 20Hz-20kHz with 80kHz measurement bandwidth |
| **Signal-to-Noise Ratio:** | >100dB, Unweighted (Full Output Reference) |
| **Maximum Noise+Hum:** | <200µV (Volume @ Max) |
| **Crossover Freq. Response (-3dB):** | @ Min position 50Hz, 18dB/octave |
| | @ Max position 150Hz, 18dB/octave |
| **Auto Turn On Sensitivity:** | 3mv |
| **Delay Turn Off Time:** | 15 - 20 minutes |
| **Input Sensitivity Line In:** | 36dB |
| | (27dB@1 o'clock position) |
| | (29dB@2 o'clock position) |
| **Input Impedance Line In:** | 47KΩ +/-5% |
| **Line Out Freq. Response (-3dB):** | (-3dB) 20Hz +/-5Hz - 20 KHz +/-50Hz 1KHz/0dB ref |
| **Maximum noise+hum (Vol Max):** | <1.0mV, Input Shorted |
| **Clearance for ventilation (Back):** | Minimum 2" / 50 mm |
| **Electrical Power Requirement:** | 115V 60Hz (Can be modified to 230V@50Hz - Contact Emotiva) |
| **Raw Weight:** | 7.8lbs / 3.6 kg |
| **Shipping Weight:** | 8.6lbs / 3.9 kg |
| **Dimensions:** | 6.0" W x 5.5" H (including feet) x 11.4375" D |
| | 152mm W x 140mm H x 290mm D |

# Limited Warranty

The Emotiva BPA-1 has been created to perform flawlessly for many years. As a result of this quality and craftsmanship, Emotiva offers the following warranty to owners of the BPA-1.

Emotiva Audio warrants the BPA-1 to be free from defects in materials and workmanship for a period of **five years** from the original date of purchase. The following items are excluded from, or will void this warranty coverage:

*1) Damage to the BPA-1 caused during shipment and handling.*
*2) Damage to the BPA-1 caused by accident, misuse or abusive operation contrary to the instructions specified within this manual.*
*3) BPA-1 units that have had the serial numbers defaced, modified, or removed.*
*4) Damage to the BPA-1 resulting from a modification of, or attempted repair by any person or company not authorized by Emotiva.*
*5) Any BPA-1 unit purchased from a non-authorized dealer.*
*6) Emotiva does not assume liability for loss of use, or damage to, associated or connected equipment.*

**Service Assistance for the BPA-1**

Please note that BEFORE sending your BPA-1 in for repair, you MUST call Emotiva and obtain a return authorization (R/A) number. Before contacting Emotiva to begin the R/A process, please have as detailed a description of the problem(s) you are experiencing and the conditions under which the problem(s) occur. Additionally, please be sure to check the troubleshooting guide in this manual to rule out the possibility of something simple you may have overlooked. If you purchased your unit from AV123, please contact them for an R/A number. Please remember, this is a complicated product and most instances of perceived product failure are the result of improper set up or operation. Emotiva and its dealers will help you ascertain whether you have an operational problem or product defect.

Once you have obtained the R/A number, you must print this clearly on the outside of the box so it will be possible to determine from whom the BPA-1 came once it arrives. Parcels arriving without an R/A number will be refused and returned freight collect.

If you purchased your unit from AV123, please contact them for an R/A number:

**AV123 (Contact Information)**
Toll Free - (877) 543-7500 (menu option 2)
Website - www.av123.com
e-mail - support@av123.com

If you purchased your unit directly from Emotiva or from an authorized Emotiva Dealer, please send your repairs with R/A number to:

**Emotiva**
Attn.: Repair Department
106 Mission Court, Suite 101
Franklin, TN. 37067
Reference - (Put your R/A number in this spot)

**Emotiva Disclosure**

 Emotiva reserves the right to make improvements to its products at any time. Therefore, the specifications of the product and the specific details of this manual are subject to change at any time.

**Emotiva**
106 Mission Court, Suite 101
Franklin, TN. 37067

Toll Free - (877) EMO-TECH
Website - www.emotivaaudio.com

***Distributed Exclusively in the US by:***

**AV123**
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